UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/955,773	09/19/2001	James E. Carey	1958.1005-001	1454

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EXAMINER
BATAILLE, PIERRE MICHE

ART UNIT	PAPER NUMBER
2186	6

DATE MAILED: 04/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/955,773	CAREY, JAMES E.
	Examiner	**Art Unit**
	Pierre-Michel Bataille	2186

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>01 March 2004</u>.

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-82* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-82* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Response to Amendment

1.   This Office Action is taken in response to Applicant's communication filed March

1, 2004 in response to Official Action dated October 27, 3003. Applicant's amendment

and/or arguments have been considered with the results that follow.

2.   All original claims 1-82 are pending in the application under prosecution as no

claims have been added or cancel.

Response to Arguments

3.   Applicant's arguments with respect to claims 1-82 have been considered to the

fullest, but are moot in view of the new ground(s) of rejection.

The nonstatutory double patenting rejection is maintained and repeated below

and no remark is made with respect to the double patenting rejection addressed in the

previous Office Action.

Double Patenting

4.   The nonstatutory double patenting rejection is based on a judicially created

doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the

unjustified or improper timewise extension of the "right to exclude" granted by a patent

and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11

F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225

USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA

1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5.   Claims 1-82 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-64 of U.S. Patent No. **6,324,623**. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claim of the patented application is an obvious variation of the present application.

-    While the independent claims (e.g. claim 1) of the present application and the independent claims of the patent commonly features system or method of simultaneously analyzing data stored in a common system memory by multiple data accessors in a computer, comprising: public blocks storing data therein for global read-only access by a plurality of user accessors; private block storing data therein for private read and write access by a single user accessor without regard to the existence of the data by any other memory block; upon read access to a data item by a user accessor, reading the data

item if present from a private block accessible by the user accessor, and if the

data item is not present on a private block accessible by the user accessor,

reading the data item from a public block; and upon write access to the data

item by the user accessor, writing the data item to a private block without

communicating any modification to another user accessor.

- The independent claims of the patent is an obvious variation of the claims of

the present application as the claims further requires: selecting each memory

block from a list of free memory blocks; and maintaining the list of free

memory blocks by triggering a flusher to free unused allocated memory

blocks in response to a triggering event.

- Dependent claims 10, 20, 37, 49, 61, and 73, reciting the additional features

noted above, duplicate the claims the published patent, as they require the

features of their independent and intervening claims in addition to the

additional features.

The claimed feature or addition/substitution of certain elements and the functions from

the claims of the present application would have been obvious if the functions or the

elements were not desired (See MPEP 2144.04 (II) A).

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7.   Claims 1-9, 12-25, 27-36, and 39-48 are rejected under 35 U.S.C. 103(a) as

being unpatentable over US 5,924,093 (Potter) in view of US 5,812,852 (Poulsen et al),

and further in view of US 5,889,138 (Hagersten et al).

With respect to claims 1, 14, 28, and 39, Potter teaches system and method

comprising of one or more processing nodes [12, Fig. 1] interconnected by a network,

each of the nodes executing one or more threads, each node being able to build and

maintain its local buffer independently [Col. 4, Lines 44-46]; a global data structure is

generated on a coordinator node [Col. 1, Lines 22-27], wherein the global data structure

stores ordered entries associated with the records stored in each of the local data

structures generated by each of the nodes, each entry maintains access to the

corresponding node [abstract; Col. 1, Lines 39-50; Col. 3, Lines 36-37, Line 62 to Col. 4,

Line 6]. Potter does not specifically teach communicating the data from one node to

another node if the data is to be shared. However, Poulsen teaches thread-privatizing

user-specified global storage objects in parallel computer programs [abstract; Col. 4,

Lines 53-61], where parallel regions execute different threads on different physical

processors in a parallel, with one thread per processor, and privatized global storage

objects provided a separate and private copy of each object for each thread, each copy

being transferred from global storage to private storage (and explicit copy-out to the

global storage takes place on-demand only) [Col. 6, Line 36 to Col. 7, Line 21], and the

global storage objects being stored in a computer storage medium have the ability to be

accessed in a shared manner by multiple threads of execution and said privatized

global storage objects being stored in a computer storage medium have the ability to be

accessed in a private manner by each of said threads, providing on-demand copy-in

from the global object to one or more parallel private regions if said privatization

specification specifies sharing or does not specify that privatization is to occur in one

particular region [Col. 4, Lines 61 to Col. 5, Line 9; Col. 7, Lines 8-18; Col. 8, Lines 51-

60; Col. 9, Lines 5-57]. The combination of Poulsen and Potter fails to teach a memory

structure featuring a common system memory shared by a plurality of data accessors,

as amended. However, Hagersten discloses parallel computing in a multiprocessing

system including a plurality of processing nodes which allows coherency of a data

structure between said plurality of processing nodes, each processing node including a

unique section or local address space of shared memory, all local address spaces

pertaining to each associated node form a distributed shared memory system [Col. 4,

Line 67 to Col. 5, Line 9; Col. 8, Lines 52-65; Col. 9, Lines 27-34].

Therefore, it would have been obvious to combine the system sorting data on a

parallel processing computer system, as taught by Potter, with the provided on-demand

copy-in from the global object to the private copy, as taught by Poulsen, because the

result would have preserved the relationships that hold between the members of

compound global storage objects while providing privatization of global storage objects,

as taught by Poulsen [Col. 5, Lines 49-55]. It would have been further obvious to one of

ordinary skill in the art to include a common system memory shared by a plurality of

data processing nodes, as taught by Hagersten, because the result would have allowed

an efficient and simple implementation of a global coherency protocol in a

multiprocessing computer system where a first transaction initiated locally by a

processor in a processing node may identify a location that is not local to the processing

node, thereby implementing a global address, as taught by Hagersten [Col. 5, Line 9-

19].

With respect to claims 5-7, 13, 19-23, 32-36, and 44-46, Poulsen teaches the

invention to include an explicit privatization system and method providing exclusive

write access to the privatized objects and using pointer indexing to indicate exclusive

member and pointer to indicated common members to be used [Col. 2, Lines 56-65;

Col. 5, Lines 7-20; Col. 9, Lines 5-10; Col. 10, Lines 46-60].

With respect to claims 2-6, 8-9, 12, 15-18, 24-25, 29-31, 40-43, and 47-48, Potter

teaches the parallel processing computer system wherein each node or each thread

executed by each node generates a file containing its local object [Col. 3, Lines 7-11]

which must then be combined with objects of the other nodes to form the global data

structure generated on a coordinator node, wherein the global data structure stores

ordered entries associated with the records stored in each of the local data structures

generated by each of the nodes, each entry maintains access to the corresponding

node [abstract; Col. 1, Lines 39-50; Col. 3, Lines 36-37, Line 63 to Col. 4, Line 2];

Poulsen additionally teaches the system and method describing being stored in a

computer storage medium and having the ability to be accessed in a shared manner by

multiple threads of execution and said privatized global storage objects being stored in

a computer storage medium and having the ability to be accessed in a private manner

by each of said threads [Col. 4, Lines 61 to Col. 5, Line 9; Col. 9, Lines 5-57].

Conclusion

8.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

US 6,049,889 (Steely, Jr. et al) teaching high performance recoverable

communication method and apparatus for write-only network.

9.   Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

10.   Any inquiry concerning this communication or earlier communications from the
examiner should be directed to Pierre-Michel Bataille whose telephone number is (703)
305-0134. The examiner can normally be reached on Tue-Fri (7:30A to 6:00P).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's
supervisor, Matthew M. Kim can be reached on (703) 305-3821. The fax phone number
for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the
Patent Application Information Retrieval (PAIR) system. Status information for
published applications may be obtained from either Private PAIR or Public PAIR.
Status information for unpublished applications is available through Private PAIR only.
For more information about the PAIR system, see http://pair-direct.uspto.gov. Should
you have questions on access to the Private PAIR system, contact the Electronic
Business Center (EBC) at 866-217-9197 (toll-free).

Pierre-Michel Bataille
Primary Examiner
Art Unit 2186

April 4, 2004